

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

SIEMENS MEDICAL SOLUTIONS USA, INC.,	)	
	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 07-190 (SLR)
	)	
SAINT-GOBAIN CERAMICS & PLASTICS, INC.,	)	<b>REDACTED –</b>
	)	<b>PUBLIC VERSION</b>
	)	
Defendant.	)	

**DECLARATION OF GREGG F. LOCASCIO, P.C., IN SUPPORT OF SIEMENS'**  
**MOTION FOR SUMMARY JUDGMENT ON SAINT-GOABIN'S AFFIRMATIVE**  
**DEFENSES AND ITS MOTION TO STRIKE SAINT-GOBAIN'S FOURTH**  
**AFFIRMATIVE DEFENSE**

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Original Filing Date: May 9, 2008  
Redacted Filing Date: May 16, 2008

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

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SIEMENS MEDICAL SOLUTIONS USA, INC.,

Plaintiff,

v.

SAINT-GOBAIN CERAMICS & PLASTICS, INC.,

Defendant.

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C.A. No. 07-190 SLR

**DECLARATION OF GREGG F. LOCASCIO, P.C., IN SUPPORT OF SIEMENS'**  
**MOTION FOR SUMMARY JUDGMENT ON SAINT-GOBAIN'S AFFIRMATIVE**  
**DEFENSES AND ITS MOTION TO STRIKE SAINT-GOBAIN'S FOURTH**  
**AFFIRMATIVE DEFENSE**

I, Gregg F. LoCascio, P.C., declare and state that the following facts are true to the best of my knowledge, information and belief. I am an attorney with the law firm of Kirkland & Ellis LLP, and one of the attorneys for Plaintiff Siemens Medical Solutions USA, Inc. in the above captioned action.

1. Attached hereto as Exhibit 1 is a true and correct copy of Defendant's Responses and Objections to Plaintiff's First Set of Interrogatories dated August 31, 2007.

2. Attached hereto as Exhibit 2 is a true and correct copy of relevant pages of Plaintiff's First Set of Document Requests to Defendant dated July 27, 2007.

3. Attached hereto as Exhibit 3 is a true and correct copy of SGCP079354 to SGCP079355, Sales of LYSO to Third Party.

4. Attached hereto as Exhibit 4 is a true and correct copy of SGCP035858, January 9, 2006 Email from Saint-Gobain to Philips .

5. Attached hereto as Exhibit 5 is a true and correct copy of SGCP002667 to SGCP002694, May 23, 2006 Umbrella Purchase Agreement.

6. Attached hereto as Exhibit 6 is a true and correct copy of relevant pages from the April 22, 2008 Deposition of Dominique Rothan.

7. Attached hereto as Exhibit 7 is a true and correct copy of SGCP093230 to SGCP093231, April 1, 2008 Amendment Number 1 to the Umbrella Purchase Agreement.

8. Attached hereto as Exhibit 8 is a true and correct copy of relevant pages from the March 14, 2008 Deposition of Markus Lusser.

9. Attached hereto as Exhibit 9 is a true and correct copy of SMS000557 to SMS000559, Health Imaging News website article dated June 6, 2007.

10. Attached hereto as Exhibit 10 is a true and correct copy of relevant pages from the April 9, 2008 Deposition of Thomas Field.

11. Attached hereto as Exhibit 11 is a true and correct copy of relevant pages from the May 7, 2008 Expert Report of Marvin J Weber.

12. Attached hereto as Exhibit 12 is a true and correct copy of Exhibit C to D. I. 21, February 27, 2007 Northern Analytical Lab Report.

13. Attached hereto as Exhibit 13 is a true and correct copy of PH 1169 to PH 1170, March 17, 2006 Letter from Siemens to Philips.

14. Attached hereto as Exhibit 14 is a true and correct copy of SMS001890, April 26, 2006 Scottish Interdict.

15. Attached hereto as Exhibit 15 is a true and correct copy of SGCP029966 to SGCP029968, June 20, 2003 Email from Saint-Gobain.

16. Attached hereto as Exhibit 16 is a true and correct copy of the Answer to Amended Complaint and Amended Counterclaim on Behalf of Defendant Saint-Gobain Ceramics & Plastics, Inc dated April 7, 2008.

17. Attached hereto as Exhibit 17 is a true and correct copy of SMS000864; SMS000894, Siemens' Biograph 16.

18. Attached hereto as Exhibit 18 is a true and correct copy of SMS001101; SMS001130, Siemens Biograph 2 and Biograph 6.

19. Attached hereto as Exhibit 19 is a true and correct copy of SMS001336; SMS001366, Siemens Biograph 64.

20. Attached hereto as Exhibit 20 is a true and correct copy of SMS001579; SMS001613, Siemens Biograph TruePoint Pet-CT.

21. Attached hereto as Exhibit 21 is a true and correct copy of SMS003558 to SMS003564, Siemens Biograph Update Instructions.

22. Attached hereto as Exhibit 22 is a true and correct copy of relevant pages of Plaintiff's First Set of Interrogatories to Defendant dated July 27, 2007.

23. Attached hereto as Exhibit 23 is a true and correct copy of relevant excerpts from a September 7, 2007 Letter from Gregg. LoCascio, P.C., to Kelly Farnan and Frederick Whitmer.

24. Attached hereto as Exhibit 24 is a true and correct copy of Defendant's Supplemental Responses and Objections to Plaintiff's First Set of Interrogatories dated September 25, 2007.

25. Attached hereto as Exhibit 25 is a true and correct copy of the April 4, 2008 Letter from John Ohman to Charanjit Brahma.

26. Attached hereto as Exhibit 26 is a true and correct copy of SGCP002151, SGCP002171 to SGCP002176, relevant excerpts from a March 16, 2006 Opinion Letter of Foley & Lardner on Behalf of Saint-Gobain.

27. Attached hereto as Exhibit 27 is a true and correct copy of SMS003146; SMS003210 to SMS003219, February 27, 1989 Amendment.

28. Attached hereto as Exhibit 28 is a true and correct copy of relevant pages from the November 2, 2007 Deposition of Kenneth McClellan.

29. Attached hereto as Exhibit 29 is a true and correct copy of SMS002949; SMS002984 to SMS002986, November 11, 1988 Office Action.

I declare under penalty of perjury that the foregoing is true and correct. Executed in Washington, DC.

Dated: May 9, 2008

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Gregg F. LoCascio', written over a horizontal line.

Gregg F. LoCascio, P.C.

**CERTIFICATE OF SERVICE**

I, the undersigned, hereby certify that on May 16, 2008, I electronically filed the foregoing with the Clerk of the Court using CM/ECF, which will send notification of such filing(s) to the following:

Kelly E. Farnan, Esquire  
RICHARDS, LAYTON & FINGER, P.A.

I also certify that copies were caused to be served on May 16, 2008 upon the following in the manner indicated:

**BY HAND DELIVERY AND ELECTRONIC MAIL**

Kelly E. Farnan, Esquire  
RICHARDS, LAYTON & FINGER, P.A.  
One Rodney Square  
Wilmington, DE 19801

**BY ELECTRONIC MAIL**

Frederick L. Whitmer, Esquire  
THELEN REID BROWN RAYSMAN & STEINER LLP  
875 Third Avenue  
New York, NY 10022

/s/ Maryellen Noreika  
Maryellen Noreika (#3208)

# **EXHIBIT 1**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

SIEMENS MEDICAL SOLUTIONS USA, INC.,	)	
	)	
Plaintiff/ Counterclaim-	)	C.A. No. 07-190-SLR
Defendant,	)	
v.	)	
	)	JURY TRIAL DEMANDED
SAINT-GOBAIN CERAMICS & PLASTICS, INC.,	)	
	)	
Defendant/Counterclaim-	)	
Plaintiff.	)	

**DEFENDANT'S RESPONSES AND OBJECTIONS TO  
PLAINTIFF'S FIRST SET OF INTERROGATORIES**

Pursuant to Rule 33 of the Federal Rules of Civil Procedure ("FRCP") and subject to the following objections, defendant Saint-Gobain Ceramics & Plastics, Inc. ("Saint-Gobain"), hereby makes the following responses and objections to plaintiff Siemens Medical Solutions USA, Inc.'s ("Siemens") First Set of Interrogatories ("Interrogatories") as follows:

**GENERAL RESERVATIONS AND OBJECTIONS**

Saint-Gobain objects to the Interrogatories to the extent that:

1. The Interrogatories call for information that is neither relevant to the subject matter of the above-captioned action (the "Action"), nor reasonably calculated to lead to the discovery of admissible evidence;
2. The Interrogatories are overly broad, unduly burdensome, harassing, and oppressive;

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3. The Interrogatories call for information for an unreasonable and unlimited period of time;

4. The Interrogatories call for information that is protected by the attorney-client privilege, the work-product doctrine, or is otherwise protected against or privileged from disclosure by law or rule of court;

5. The Interrogatories call for information that is not in the possession, custody or control of Saint-Gobain;

6. The Interrogatories are so vague and ambiguous that they do not properly advise Saint-Gobain as to the information requested;

7. The Interrogatories call for the disclosure of confidential, proprietary, or trade secret information. The disclosure of confidential information, if any, would be made subject to an appropriate confidentiality stipulation and protective order to be entered into between the parties to the Action and approved by the Court;

8. The Interrogatories attempt to impose upon Saint-Gobain obligations beyond those which are required by the Federal Rules;

9. Saint-Gobain objects to the characterization and definition of "Parent Application" set forth in the Interrogatories insofar as U.S. Patent Applications Ser. No. 06/705,701 and Ser. No. 08/775,458 are unrelated to the '080 Patent;

10. Saint-Gobain objects to the characterization and definition of "Accused Product" set forth in the Interrogatories as vague, ambiguous, overbroad and not reasonably calculated to lead to the discovery of admissible evidence. Saint-Gobain further states that, for purposes of its responses and objections in response to the Interrogatories, "Accused Product"

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shall be construed to refer to any activated, lutetium-based orthosilicate single crystal products manufactured, sold or offered for sale by Saint-Gobain;

11. Saint-Gobain objects to the characterization and definition of "LSO" set forth in the Interrogatories as vague, ambiguous, overbroad and not reasonably calculated to lead to the discovery of admissible evidence. Saint-Gobain further states that, for purposes of its responses and objections in response to the Interrogatories, "LSO" shall be construed to refer to activated, lutetium oxyorthosilicate single crystals;

12. Saint-Gobain objects to the characterization and definition of "LYSO" set forth in the Interrogatories as vague, ambiguous, overbroad and not reasonably calculated to lead to the discovery of admissible evidence. Saint-Gobain further states that, for purposes of its responses and objections in response to the Interrogatories, "LYSO" shall be construed to refer to activated, lutetium yttrium orthosilicate single crystals; and/or

13. The Interrogatories assume or assert the accuracy of facts not established in the Action, including but not limited to, the accuracy of the specific definitions provided with the Interrogatories.

All responses are made without in any way waiving or intending to waive, but to the contrary, preserving:

1. All objections as to competency, materiality, privilege and admissibility as evidence for any purpose in this Action or any subsequent proceeding or trial, all of which objections are hereby expressly reserved;

2. The right to object on any ground to the use of any of these responses, or the subject matter thereof, in this Action or any subsequent proceeding or trial; and

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3. The right to supplement and/or amend these responses based upon the discovery of additional information and/or documents after further investigation.

As to certain Interrogatories with respect to which Saint-Gobain asserts an objection or objections, Saint-Gobain asserts such objection or objections in order to reserve its rights and with the good faith intention to enter into a discussion with opposing counsel designed to clarify the purpose, intention, timing, and/or scope of the particular Interrogatory prior to providing appropriate substantive responses, if any.

The foregoing General Reservations and Objections are incorporated into each of the Responses and Objections to the specific Interrogatories set forth below.

#### **OBJECTIONS TO DEFINITIONS AND INSTRUCTIONS**

Saint-Gobain objects to the Definitions and Instructions set forth in the Interrogatories to the extent that they contradict, are inconsistent with, or seek to impose any obligation or burden on Saint-Gobain not specifically required by the Federal Rules.

The foregoing Objections to Definitions and Instructions are incorporated into each of the Objections and Responses to Specific Interrogatories set forth below.

#### **INTERROGATORY NO. 1**

Identify any term used in any claim of the '080 Patent which Saint-Gobain contends must be construed by the Court and provide Saint-Gobain's construction of each such term.

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REDACTED

VERIFICATION

I Thomas G. Field, am the agent of Saint-Gobain Ceramics & Plastics, Inc. for purposes of preparing the within responses to Plaintiff's First Set of Interrogatories to Defendant. I have read the Interrogatories, and the foregoing answers to those Interrogatories are true to the best of my knowledge, information and belief as of the date hereof. I declare under penalty of perjury that the foregoing is true and correct.

Executed in Worcester, Massachusetts  
August 31, 2007

SAINT-GOBAIN CERAMICS & PLASTICS, INC.

By: \_\_\_\_\_

Thomas G. Field

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FOR OUTSIDE COUNSEL'S EYES ONLY

**CERTIFICATE OF SERVICE**

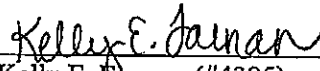
I hereby certify that on August 31, 2007 true and correct copies of the foregoing document were caused to be served on counsel of record at the following addresses as indicated:

**E-MAIL AND HAND DELIVERY**

Jack B. Blumenfeld  
Maryellen Noreika  
Morris, Nichols, Arsht & Tunnell LLP  
1201 North Market Street  
Wilmington, DE 19899

**E-MAIL AND FEDERAL EXPRESS**

Gregg F. LoCascio  
Charanjit Brahma  
Sean M. McEldowney  
Kirkland & Ellis LLP  
655 15<sup>th</sup> Street, N.W.  
Washington, DC 20005-5793

  
\_\_\_\_\_  
Kelly E. Raman (#4395)

# **EXHIBIT 2**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

SIEMENS MEDICAL SOLUTIONS USA,  
INC.,

Plaintiff,

v.

SAINT-GOBAIN CERAMICS &  
PLASTICS, INC.,

Defendant.

C.A. No. 07-190 (SLR)

**PLAINTIFF'S FIRST SET OF DOCUMENT REQUESTS TO DEFENDANT**

Pursuant to Rule 34 of the Federal Rules of Civil Procedure, Plaintiff Siemens Medical Solutions USA, Inc. ("Siemens Medical") hereby directs the following document requests to Defendant Saint-Gobain Ceramics & Plastics, Inc. ("Saint-Gobain") to be answered in writing, separately and fully, by August 17, 2007 by agreement of the parties.

**REQUESTS**

Plaintiffs are requested to produce the following documents and things:

**DOCUMENT REQUEST NO. 1:**

All Documents Concerning the '080 Patent, the '080 Patent Application or a Related Application or any portion thereof.

**DOCUMENT REQUEST NO. 2:**

All Documents Concerning the Inventor.

Suit asserts priority under 35 U.S.C. § 119 or 120, including without limitation United States Patent Application Ser. Nos. 06/705,701 and 08/775,458.

4. **"Related Application"** as used herein means any patent application, including any patent that issued therefrom, either from which the '080 Patent Application claims priority under 35 U.S.C. § 119 or 120, including without limitation United States Patent Application Ser. Nos. 07/254,353 , or which asserts priority under 35 U.S.C. § 120 or § 119 from the '080 Patent Application, including without limitation United States Patent Application Ser. Nos. 07/575,187 and 07/389,502.
5. **"Prior Art"** as used herein means any document or act that constitutes prior art under 35 U.S.C. § 102.
6. **"LSO"** as used herein means lutetium oxyorthosilicate.
7. **"LYSO"** as used herein means lutetium yttrium orthosilicate.
8. **"Accused Product"** as used herein means any lutetium-based scintillator crystal that Saint-Gobain has made, used, sold or imported since September 18, 1990, including, without limitation, the PreLude 420 crystal.
9. **"Philips Medical Systems"** as used herein means Philips Medical Systems (Cleveland), Inc. or any affiliate, subsidiary or parent thereof.
10. **"Siemens Predecessors"** as used herein means CTI, Inc. and CTI Molecular Imaging, Inc.
11. **"Inventor"** as used herein means the sole inventor named on the '080 Patent, Charles L. Melcher.

#### **INSTRUCTIONS**

1. **Information Requested.** In answering these document requests, furnish all information, however obtained, including hearsay, that is available to Plaintiffs or subject to Plaintiffs' reasonable inquiry, access or control, including information in the actual or constructive possession of Plaintiffs, their attorneys, experts, and anyone else acting on Plaintiffs' behalf.



2. **Time Period.** These document requests are not limited as to time period unless stated.
3. **Objections.** If any part of any document request is objected to, set forth the basis for Plaintiffs' objection and respond to all parts of the document request to which Plaintiffs do not object, pursuant to Federal Rule of Civil Procedure 34(b).
4. **Privilege.** If any privilege is claimed as a ground for not answering any document request or for withholding any information responsive to any document request, provide all information required by Federal Rule of Civil Procedure 26(b)(5) and Local Rule 26.2 of the United States District Court for the Southern District of New York.
5. **Destruction.** If Plaintiffs have knowledge of any document, tangible object, or other thing that is responsive to any document request, but has been destroyed or is no longer in existence, identify and describe with particularity the document, tangible object, or thing destroyed, where it was destroyed, who possessed it prior to its destruction, who destroyed it, what the contents of the document, tangible object or thing were prior to its destruction, and why and how it was destroyed.
6. **All/Each.** The terms "all" and "each" shall be construed as all and each.
7. **And/Or.** The connectives "and" and "or" shall be construed either disjunctively or conjunctively as necessary to bring within the scope of a document request all responses that otherwise might be construed to be outside of its scope.
8. **Number.** The use of the singular form of any word includes the plural and vice versa.
9. **Partial Response.** If Plaintiffs cannot respond to all or part of any document request after exercising due diligence to secure the full information to do so, so state and answer to the extent possible, specifying Plaintiffs' inability to answer the remainder. In any partial response, state whatever information or knowledge Plaintiffs have concerning the unanswered portion, and detail what efforts have been taken to secure the unknown information.

# **EXHIBIT 3**

REDACTED

# **EXHIBIT 4**

REDACTED

# **EXHIBIT 5**

**REDACTED**

# **EXHIBIT 6**



**REDACTED**

# **EXHIBIT 7**

REDACTED

# **EXHIBIT 8**

REDACTED

# **EXHIBIT 9**

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## Philips' highlights enhanced PET/CT, 'green' BrightView SPECT

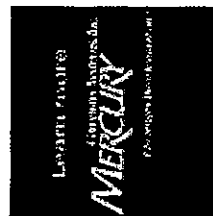
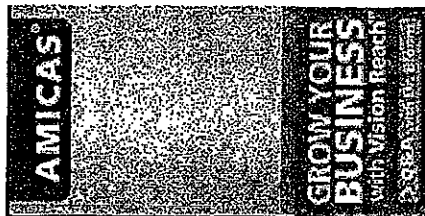
Health Imaging News | June 6, 2007 | SNM 360

Royal Philips Electronics this week at SNM 2007 in Washington, D.C., announced enhancements to Philips GEMINI TF PET/CT, a time-of-flight PET/CT, and the nuclear medicine debut of a "green" BrightView SPECT, among other technologies.

"The breadth of our nuclear medicine products and solutions in PET, SPECT, molecular imaging (MI), preclinical imaging and radiation oncology promote clinical confidence for the physician and peace of mind for the patient," said Jay Mazelsky, senior vice president, nuclear medicine, for Philips Medical Systems. "Philips recognizes the importance of accurately viewing the physiological process at a molecular level and works to develop technologies that help our customers detect pathology earlier, faster and more accurately."

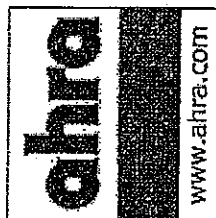
Philips emphasized that its installed for the GEMINI TF PET/CT is growing, with more than 30 installed systems worldwide. The GEMINI TF with time-of-flight imaging has demonstrated improved image quality, reduced dose, faster scan times, and consistent image quality across all patient sizes.

Dr. Jim O'Donnell, section chief of Nuclear Imaging at University Hospitals Case Medical Center said of the system, "We've really gone another giant step forward in image resolution with time-of-flight. And the differential improvement in moving from conventional PET to time-of-flight is most prominent in larger patients because it overcomes the inherent physiological problems of size. The system really cleans up the scans in these larger patients."



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Also on display was the company's compact BrightView SPECT. The system's BodyGuard feature automatically contours to the patient, using a customizable scan distance preset by the operator. Also, Philips' CloseUp technologies enable higher resolution through smart software, new electronics and minimal distance between detector and patient.

Philips also boasted that the BrightView is also its "green flagship" product, thus BrightView with a sustainable life cycle in mind, using less than 50 percent of the hazardous substances found in its predecessor. BrightView is also designed to offer significant advances on packaging, recycling and disposal.

The company also showcased its MOSAIC HP, a part Philips' comprehensive preclinical imaging product portfolio. The system has extra-long imaging bore and long axial field of view, useful for a variety of research subjects as well as the capability to perform bio-distribution studies on a whole subject (mice) in a single bed position. Equipped with a high performance LYSO detector and optional subject handling system compatible with the NanoSPECT/CT system, MOSAIC HP addresses the key requirements of research scientists and is setting new standards in preclinical molecular imaging.

Other highlights at the show included:

- PET/CT Pulmonary Toolkit for Respiratory Correlated Imaging – Respiratory correlated imaging applied to PET Improves the accuracy of PET attenuation correction and Standard Uptake Value (SUV) calculations, assists in small lesion detection and facilitates more precise localization;
- PET/CT Viewer for Philips iSite PACS and version 1.5, providing users with an integrated, powerful, yet simple image review and analysis environment for routine clinical evaluation of PET/CT examinations. Philips has extended the availability of the PET/CT Viewer beyond the Philips Extended Brilliance Workspace to the Philips iSite PACS, along with introducing the latest release of version 1.5;
- NetForum PET/CT Community – Previously available to Philips CT and MR customers only, the NetForum PET/CT community is connecting Philips PET/CT customers from around the globe in a moderated virtual users meeting to share clinical experiences, learn from each other and optimize results;
- NanoSPECT/CT – Available through a distribution agreement with Bioscan Inc. announced earlier this year, NanoSPECT/CT will help accelerate preclinical research, the discovery of new targeted biomarkers and the development and validation of new molecular diagnostic and therapeutic applications; and
- Philips announced the commercial release of the JETStream Workspace 3.0, an

<http://www.healthimaging.com/content/view/full/6654/89/>



Integrated, personalized workflow solution for nuclear medicine that includes new process and image display enhancements, new image analysis tools and upgraded clinical applications for cardiac, bone, renal, salivary, lung and brain studies.

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<http://www.healthimaging.com/content/view/6654/89/>

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# **EXHIBIT 10**

REDACTED

# **EXHIBIT 11**

REDACTED

# **EXHIBIT 12**

**NORTHERN ANALYTICAL LABORATORY, INC.**

23 Depot St., Merrimack, NH 03054

Phone: (603) 429-9500

FAX: (603) 429-9471

**TEST REPORT**

Dr. Piotr Szupryczynski  
Siemens Medical Solutions, USA  
Molecular Imaging  
203 Dunavant Dr.  
Rockford, TN 37853

RECEIVED 2/26/07  
IDENT AS See below  
MATERIAL (LuY)<sub>2</sub>SiO<sub>3</sub>  
CONDITION Solid  
TEST TO  
TEST PER TP-ICP1

SAMPLE NUMBER G135782  
REPORT DATE 2/27/07  
PAGE 1 of 1  
CLIENT ORDER

**Method:****ICP-MS analysis**

Sample I.D.  
24 LYS 013-1 S#2

Y(wt%)  
4.14 ± 0.1

Analysis By: Peter S. Dickson  
Analytical Chemist

Approved By: William A. Guidoboni  
Sr. Analytical Chemist



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**Glow Discharge Mass Spectroscopy**  
**NORTHERN ANALYTICAL LABORATORY, INC.**

23 Depot St., Merrimack, NH 03054

Phone: (603) 429-9500

FAX: (603) 429-9471

www.northernanalytical.com

SAMPLE NO. GI35782

FILE NO. 4SIEM1

DATE: 2/27/2007

Piotr Szupryczynski Ph.D.

Lu<sub>2</sub>SiO<sub>5</sub>

Siemens Medical Solutions

203 Dunavant Dr.

PO #

Rockford, TN 37853

# 24LYS013-2

ANALYSIS	ppmw	ANALYSIS	ppmw	ANALYSIS	ppmw
H		Zn	<0.5	Pr	0.03
Li	<0.05	Ga	<0.5	Nd	0.07
Be	<0.05	Ge	<0.5	Sm	0.09
B	0.09	As	<0.5	Eu	0.70
C		Se		Gd	0.30
N		Br		Tb	0.65
O	Major	Rb		Dy	0.20
F	<1	Sr		Ho	0.52
Na	0.75	Y	Major	Er	0.10
Mg	0.15	Zr	0.15	Tm	0.04
Al	1.9	Nb	<0.1	Yb	14
Si	Major	Mo	≤0.1	Lu	Major
P	0.35	Ru		Hf	<0.1
S	2.5	Rh		Ta	<5
Cl	6.0	Pd		W	<0.5
K	0.40	Ag	<0.5	Re	
Ca	6.0	Cd		Os	
Sc	<0.1	In		Ir	≤0.5
Ti	0.16	Sn	0.15	Pt	<0.5
V	0.01	Sb	<0.1	Au	<5
Cr	0.20	Te	<0.5	Hg	
Mn	0.020	I		Tl	
Fe	1.1	Cs		Pb	0.04
Co	<0.05	Ba	<0.5	Bi	≤0.1
Ni	0.065	La	0.10	Th	<0.01
Cu	≤0.1	Ce	600	U	0.10

All other elements &lt;0.1ppmw, each



ANALYSIS BY:

William A. Guidoboni/ Sr. Analytical Chemist

APPROVED BY:

Name/Function

Richard J. Guidoboni / President

Name/Function

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# **EXHIBIT 13**

**SIEMENS**

via Telefax +31 40 27 43489

Philips Intellectual Property & Standards  
 Attn. Mr. Marc Schouten  
 P.O. Box 220  
 5600 AE Eindhoven

NETHERLANDS

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Ihr Schreiben  
 Unser Zeichen

Sid / BMO  
 17 March 2006

Datum

Dear Mr. Schouten,

As you may know, Siemens is the exclusive licensee of United States Patent No. 4,958,080 by virtue of its acquisition of CTI Molecular Imaging, Inc. last year. This patent relates to a gamma ray or x-ray detector having a scintillator composed of the material lutetium oxyorthosilicate ("LSO"). We enclose a copy of the relevant patent for your convenience.

We have recently learned that your "Gemini Raptor" PET/CT system uses a detector scintillator composed of lutetium yttrium oxyorthosilicate ("LYSO") that we believe infringes this patent. This is disconcerting as this patent is deemed excluded under our existing patent cross-license agreement. Siemens has closely investigated LYSO as a scintillator material. We believe there is no substantive difference between the two materials designated LSO and LYSO. The investigation of Siemens regarding the properties of LYSO is born out by a recently published paper, entitled "Large Size LYSO Crystals for Future High Energy Physics Experiments," IEEE Trans. Nucl. Sci. NS-52 (2005) 3133. This paper states in its conclusion "Ce doped LSO and LYSO crystals have identical emission, excitation and transmission spectra."

Further, Siemens is prosecuting a litigation concerning the European equivalent of the United States patent, European Patent No. 0 373 976, against Photonic Materials Ltd. in the Court of Sessions of Edinburgh, Scotland for making and selling LYSO material. Siemens has every expectation that this litigation will be resolved shortly in its favor.

**Corporate Technology**

Corporate Intellectual Property and Functions

Leitung:  
 Dr. Winfried Böttner

Briefadresse:  
 Siemens AG

Postfach 22 16 34  
 80505 München

Hausadresse:  
 San-Carlos-Str. 7  
 91058 Erlangen

Siemens Aktiengesellschaft - Vorsitzender des Aufsichtsrats: Heinrich v. Pierer - Vorstand: Klaus Kleinfeld, Vorsitzender,  
 Johannes Feldmayer, Thomas Ganswindt, Edward G. Krubasik, Rudi Lamprecht, Heinz-Joachim Neubürger, Jürgen Radomski,  
 Erich R. Reinhardt, Ulfel J. Sharf, Claus Weyrich, Klaus Wucherer  
 Sitz der Gesellschaft: Berlin und München - Registergericht: Berlin-Charlottenburg, HRB 12300; München, HRB 6634

PH 1169

000092

IDNR: 4210 / V: 99-1.00 / B: Val

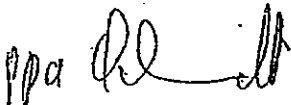
**SIEMENS**

Page 2 to letter of 17 March 2006  
to Philips Intellectual Property

Siemens and Philips have a long and respectful relationship with respect to IP matters and we are very concerned about the introduction of the LYSO scanner by Philips. We believe it would be advantageous to meet with representatives of Philips to discuss this matter so that we may try to resolve this issue. Siemens feels strongly that such a meeting is necessary before Philips makes plans for broad commercial marketing for such a system which potentially infringes our above-referenced patent.

We look forward to hearing from you at your earliest convenience.

Siemens Aktiengesellschaft

  
Schmidt

sgd. ppa Kirschbaum

Enc.

US 4,958080

PH 1170  
000093

# **EXHIBIT 14**

A389/04 Cti Molecular Imaging, Inc-V-Photonic Materials Limited & An  
McGrigor Donald Maclay Murray & Spens

**26 April 2006**

**Lord Mc Ewan**

The Lord Ordinary, on the unopposed motion of the Pursuer, Interpones authority of the Court to Joint Minute, No. 17 of process, and in terms thereof (1) Grants Interdict against the first defender, its servants, agents or anyone acting on its behalf or under its instruction: (a) from infringing Claims 1 and 2 of the Patent in any manner whatsoever; (b) in particular and without prejudice to the generality of the foregoing, from making, disposing of, offering to dispose of, using or keeping for disposal or otherwise (i) a cerium-doped lutetium yttrium oxyorthosilicate scintillator crystal; or (ii) any other scintillator for use in a gamma ray or x-ray detector comprising: (a) a transparent single crystal of cerium-activated lutetium oxyorthosilicate having the general formulation  $\text{Ce}_2\text{xLu}_2(1-\text{x})\text{SiO}_5$  where x is within the range of from approximately  $2 \times 10^{-4}$  to approximately  $3 \times 10^{-2}$ ; and/or (b) a transparent single crystal of cerium-activated lutetium oxyorthosilicate having the general formulation  $\text{Ce}_2\text{xLu}_2(1-\text{x})\text{SiO}_5$  wherein x is within the range of approximately  $1 \times 10^{-3}$  to approximately  $4.5 \times 10^{-3}$ ; and (iii) from causing, authorising, inducing, facilitating, assisting, procuring or enabling any person to infringe Claims 1 and 2 of the Patent in any manner whatsoever. (2) Grants interdict against the first defender, its servants, agents or anyone acting on its behalf or under its instruction (a) from infringing Claim 3 of the Patent in any manner whatsoever; (b) in particular and without prejudice to the generality of the foregoing, from supplying or offering to supply in the United Kingdom any person other than the pursuer or second defender or other persons entitled to work the invention claimed in Claim 3 of the Patent with the means relating to any essential element of that invention for putting that invention into effect, in particular from supplying or offering to supply such persons with crystals falling within the scope of Claims 1 or 2 of the Patent including cerium-doped lutetium yttrium oxyorthosilicate scintillator crystals; and (c) from causing, authorising, inducing, facilitating, assisting, procuring or enabling any person to infringe Claim 3 of the Patent in any manner whatsoever. (3) Grants decree of dismissal in favour of the second defender. (4) Subject to decree being pronounced in terms of paragraphs 1, 2 and 3 above and without prejudice to any existing awards of expenses, finds no expenses due to or by any party; and decerns.

# **EXHIBIT 15**

REDACTED

# **EXHIBIT 16**



IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

SIEMENS MEDICAL SOLUTIONS USA,	)	
INC.,	)	
Plaintiff/ Counterclaim-	)	
Defendant,	)	C.A. No. 07-190-SLR
	)	
v.	)	
	)	JURY TRIAL DEMANDED
SAINT-GOBAIN CERAMICS & PLASTICS,	)	
INC.,	)	
Defendant/Counterclaim-	)	
Plaintiff.	)	

**ANSWER TO AMENDED COMPLAINT AND AMENDED COUNTERCLAIM  
ON BEHALF OF DEFENDANT SAINT-GOBAIN CERAMICS & PLASTICS, INC.**

Defendant Saint-Gobain Ceramics & Plastics, Inc. ("Saint-Gobain"), by its attorneys, Richards, Layton and Finger, P.A. and Thelen Reid Brown Raysman & Steiner LLP, as and for its Answer to the Amended Complaint of plaintiff Siemens Medical Solutions USA, Inc. ("Siemens"), says:

1. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 1 of the Amended Complaint.
2. Saint-Gobain admits the allegations contained in Paragraph 2 of the Amended Complaint.
3. Saint-Gobain admits the allegations contained in Paragraph 3 of the Amended Complaint.
4. Saint-Gobain admits the allegations contained in Paragraph 4 of the Amended Complaint.
5. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 5 of the Amended Complaint, except Saint-

Gobain refers to the contents of United States Letters Patent No. 4,958,080 ("the '080 Patent") for the precise terms and meaning thereof.

6. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 6 of the Amended Complaint, except Saint-Gobain refers to the contents of the Exclusive Patent License and Technology Agreement, dated as of February 1, 1995, by and between Schlumberger Technology Corporation ("STC") and CTI, Inc. ("CTI"), for the precise terms and meaning thereof.

7. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 7 of the Amended Complaint.

8. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 8 of the Amended Complaint.

9. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 9 of the Amended Complaint, except Saint-Gobain refers to the contents of the Exclusive Patent License and Technology Agreement, dated as of February 1, 1995, by and between STC and CTI, for the precise terms and meaning thereof.

10. Saint-Gobain denies the allegations contained in Paragraph 10 of the Amended Complaint.

11. Saint-Gobain is without knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 11 of the Amended Complaint, except Saint-Gobain refers to the contents of the Assignment identified therein for the precise terms and meaning thereof.

12. Saint-Gobain denies the allegations contained in paragraph 12 of the Amended Complaint.

13. Saint-Gobain denies the allegations contained in paragraph 13 of the Amended Complaint.

14. Saint-Gobain denies the allegations contained in paragraph 14 of the Amended Complaint.

15. Saint-Gobain denies the allegations contained in paragraph 15 of the Amended Complaint.

16. Saint-Gobain denies the allegations contained in paragraph 16 of the Amended Complaint.

17. Saint-Gobain denies the allegations contained in paragraph 17 of the Amended Complaint.

18. Saint-Gobain denies the allegations contained in paragraph 18 of the Amended Complaint.

#### **AFFIRMATIVE DEFENSES**

##### **FIRST AFFIRMATIVE DEFENSE**

The Amended Complaint fails, in whole or in part, to state a claim upon which relief may be granted.

##### **SECOND AFFIRMATIVE DEFENSE**

Saint-Gobain has not infringed, and does not infringe, either through inducement of infringement, or by contributory infringement, any claim of the '080 Patent, either literally or under the doctrine of equivalents.

##### **THIRD AFFIRMATIVE DEFENSE**

Siemens' claims may be limited by virtue of the application of 35 U.S.C. § 287.

**FOURTH AFFIRMATIVE DEFENSE**

Siemens is estopped from construing any claim of the '080 Patent to be infringed or to have been infringed, either literally or under the doctrine of equivalents, by any method or product manufactured, used, imported, sold or offered for sale by Saint-Gobain, in view of the prior art and/or because of admissions and statements made to the United States Patent and Trademark Office during prosecution of the application leading to the issuance of the '080 Patent, because of disclosure or language in the specification of the '080 Patent, and/or because of limitations in the claims of the '080 Patent.

**FIFTH AFFIRMATIVE DEFENSE**

Plaintiffs claims are barred, in whole or in part, by the doctrines of laches, waiver and/or estoppel.

**AMENDED COUNTERCLAIM ON BEHALF OF  
SAINT-GOBAIN CERAMICS & PLASTICS, INC.**

Counterclaim-Plaintiff, Saint-Gobain Ceramics & Plastics, Inc., as and for its Amended Counterclaim against Counterclaim-Defendant Siemens Medical Solutions, USA, Inc., alleges as follows:

1. Counterclaim-Plaintiff Saint-Gobain Ceramics & Plastics, Inc. ("Saint-Gobain") is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in Newbury, Ohio.
2. Counterclaim-Defendant Siemens Medical Solutions, USA, Inc. ("Siemens") has itself alleged that it is a corporation organized and existing under the law as of the State of Delaware, with its principal place of business in Malvern, Pennsylvania.

3. This Amended Counterclaim is brought pursuant to the Declaratory Judgment Act, 28 U.S.C. §§ 2201 (a) and 2202, and pursuant to the patent laws of the United States, 35 U.S.C. § 1 et seq., and by virtue of Federal Rule of Civil Procedure 13 as a mandatory Counterclaim. This Court has jurisdiction over this Amended Counterclaim pursuant to 28 U.S.C. §§ 1131 and 1338.

4. Venue is proper in this District pursuant to 28 U.S.C. § 1391 (b), (c) and 1400(b).

5. An actual and justiciable controversy has arisen and currently exists between the parties for which Saint-Gobain seeks a declaration of rights pursuant to 28 U.S.C. §§ 2201 (a) and 2202 and Rule 57 of the Federal Rules of Civil Procedure, inasmuch as Siemens has alleged that Saint-Gobain is infringing United States Letters Patent No. 4,958,080 ("the '080 Patent"). Saint-Gobain has denied this allegation and asserts that it does not infringe any valid claim of the '080 Patent.

6. Saint-Gobain has not infringed, and does not infringe directly or indirectly, and will not in the future infringe, directly or indirectly, any valid claim of the '080 patent, if any.

#### **PRAYER FOR RELIEF**

WHEREFORE, Counterclaim-Plaintiff Saint-Gobain Ceramics & Plastics, Inc. prays for judgment in its favor and Counterclaim-Defendant against Siemens Medical Solutions USA, Inc., as follows:

1. Dismissing the Amended Complaint herein with prejudice and awarding Counterclaim-Plaintiff Saint-Gobain Ceramics & Plastics, Inc. its costs incurred in this action.

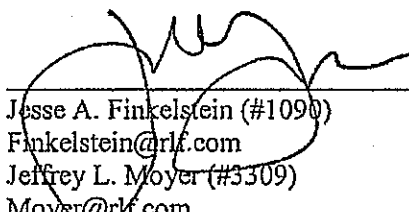
2. A declaration that Counterclaim-Plaintiff Saint-Gobain Ceramics & Plastics, Inc. does not infringe any valid claim of the '080 patent, either directly or indirectly, either literally or

under the doctrine of equivalents.

3. Permanently enjoining and restraining Counterclaim-Defendant Siemens Medical Solution USA, Inc., its agents, servants, subsidiaries, affiliates, employers and all those in active concert or participation with them, from asserting, directly or indirectly, any claim of infringement of the '080 Patent against Counterclaim-Plaintiff Saint-Gobain Ceramics & Plastics, Inc. or against any person or entity in privity with Saint-Gobain Ceramics & Plastics, Inc.

OF COUNSEL:

Frederick L. Whitmer  
John C. Ohman  
Thelen Reid Brown Raysman & Steiner LLP  
875 Third Avenue  
New York, NY 10022  
(212) 603-2000



---

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Richards, Layton & Finger, P.A.  
One Rodney Square, P.O. Box 551  
Wilmington, DE 19899  
(302) 651-7700  
*Attorneys for Defendant/ Counterclaim-  
Plaintiff Saint-Gobain Ceramics & Plastics,  
Inc.*

Dated: April 7, 2008

UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

**CERTIFICATE OF SERVICE**

I hereby certify that on April 7, 2008, I electronically filed the foregoing document with the Clerk of the Court using CM/ECF which will send notification of such filing to the following and which has also been served as noted:

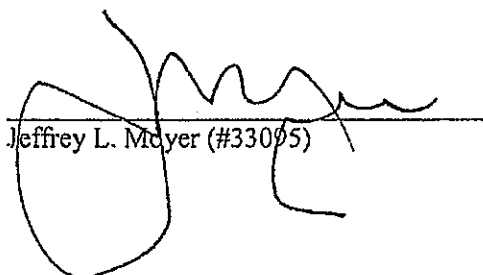
**BY HAND DELIVERY**

Jack B. Blumenfeld  
Maryellen Noreika  
Morris, Nichols, Arsht & Tunnell LLP  
1201 North Market Street  
Wilmington, DE 19899

I hereby certify that on April 7, 2008, the foregoing document was sent to the following non-registered participants in the manner indicated:

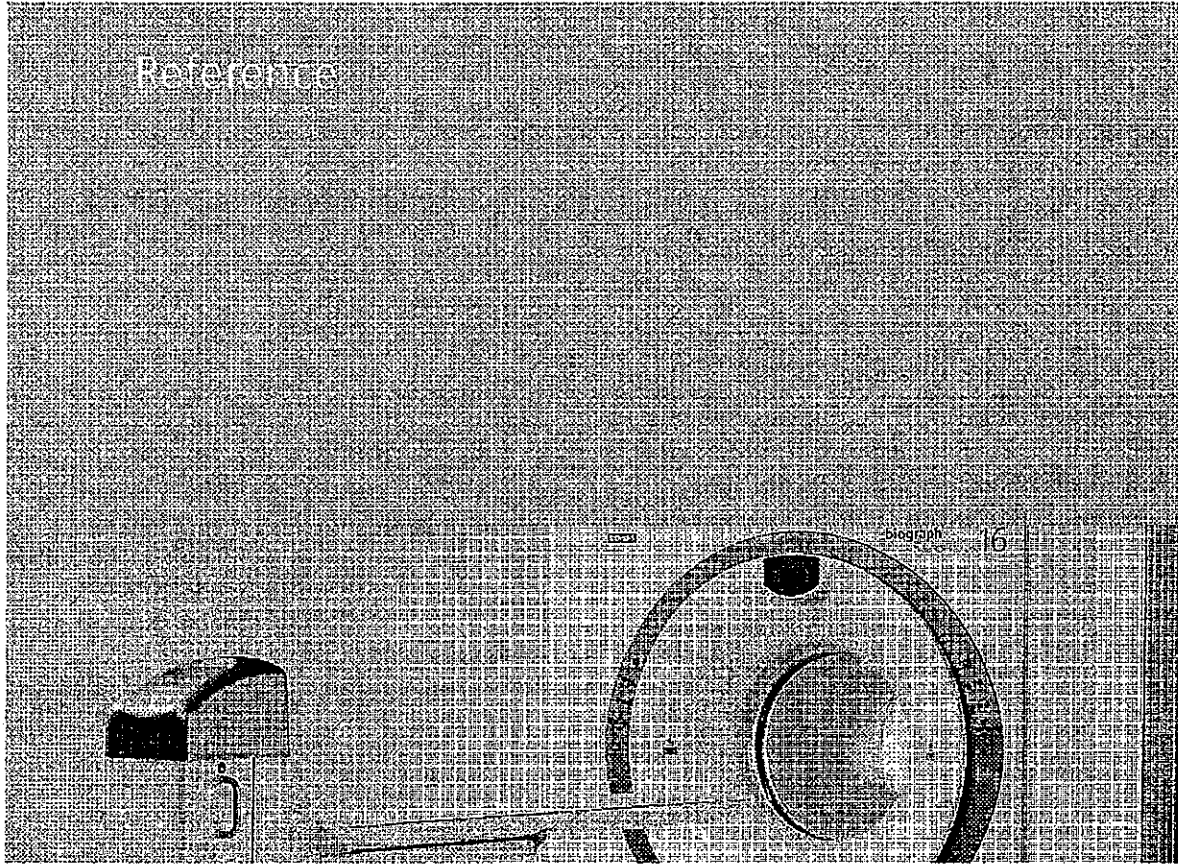
**BY FEDERAL EXPRESS**

Gregg F. LoCascio  
Charanjit Brahma  
Sean M. McEldowney  
Kirkland & Ellis LLP  
655 15<sup>th</sup> Street, N.W.  
Washington, DC 20005-5793

  
Jeffrey L. Meyer (#33095)

# **EXHIBIT 17**





Operator's Guide  
**biograph 16**

**SIEMENS**  
medical

PETsyngo 4.1, September 2005, Part # D0005772 Rev. A

SMS000864  
000109

## Patient Handling System

### DHHS Label

THIS PRODUCT COMPLIES  
WITH DHHS REGULATIONS  
21 CFR SUBCHAPTER J  
APPLICABLE DATE OF  
MANUFACTURE

### Patent Label

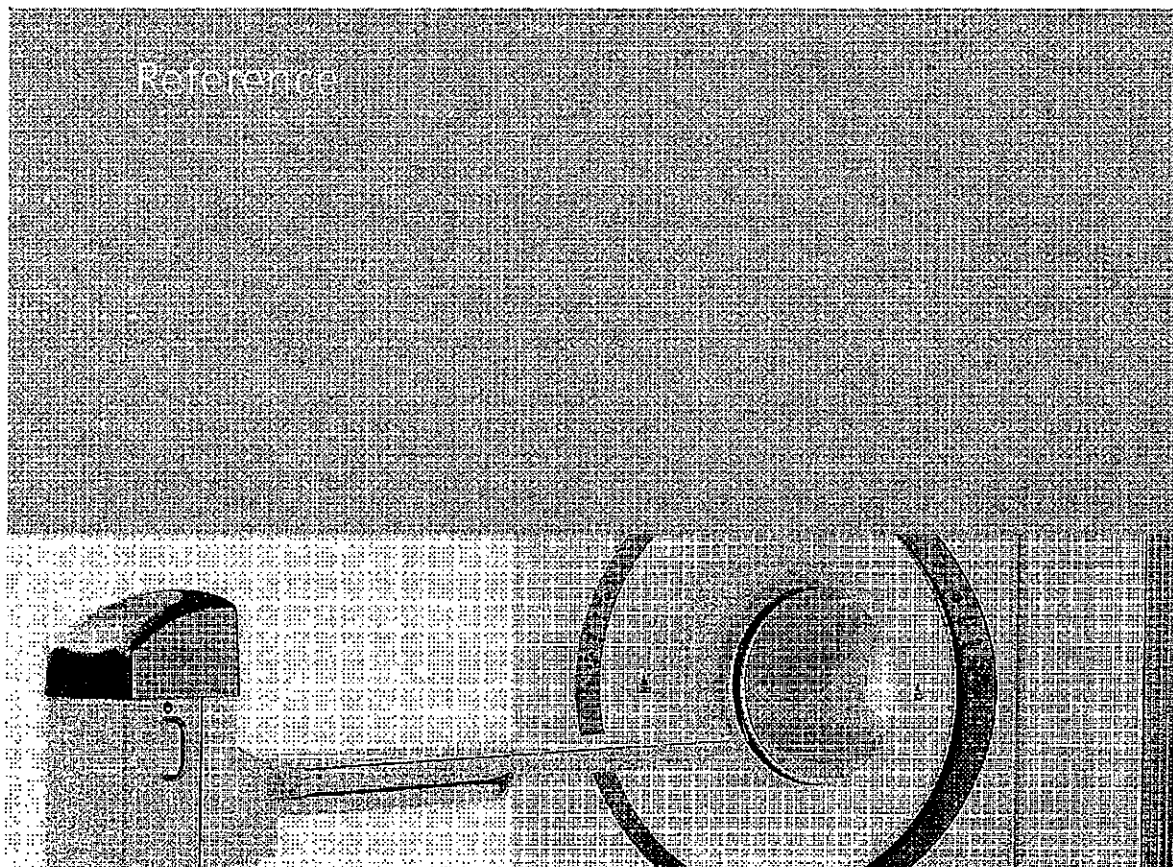
ONE OR MORE OF THESE U.S. AND FOREIGN  
PATENTS APPLY TO THIS DEVICE:

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4,760,872	6,329,657	5,413,311
4,843,245	6,342,688	CAN-1,245,375
4,958,080	6,362,479	EP-0373970
5,025,151	6,429,434	EP-86800407.7
5,224,037	6,865,165	JP-1,260,315
5,298,708	6,899,234	JP-500249186
5,367,222	6,749,761	NOR-893973
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5,471,061	6,631,284	
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6,040,580	6,852,980	
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### Trip Hazard Label



# **EXHIBIT 18**



Operator's Guide  
**biograph 2**  
**biograph 6**

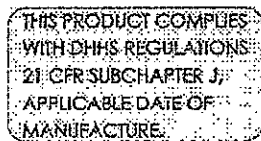
PETsyngo 4.1, September 2005, Part # D0005975 Rev. A

**SIEMENS**  
medical

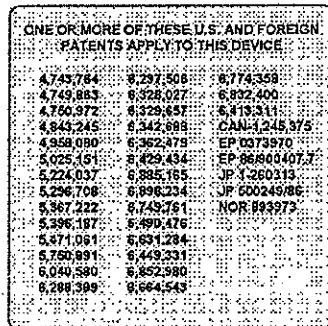
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## Patient Handling System

### DHHS Label



### Patent Label

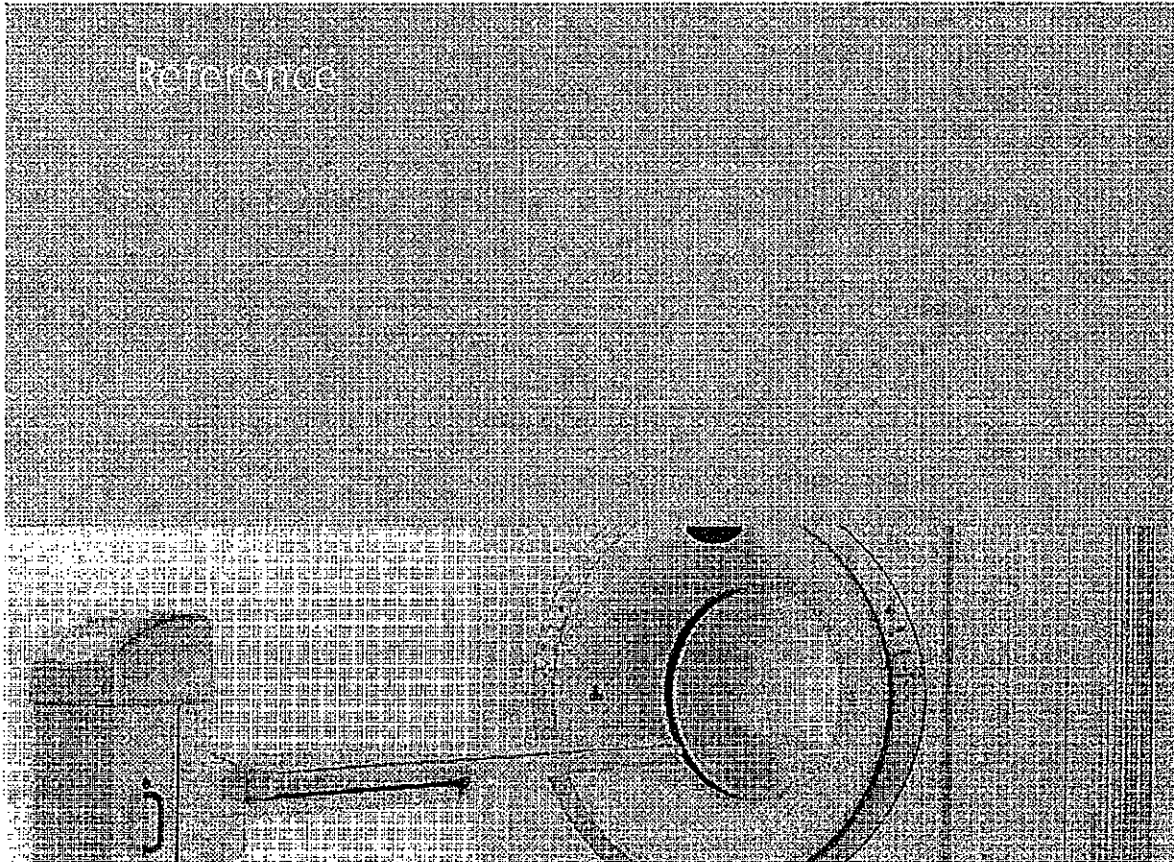


### Trip Hazard Label



# **EXHIBIT 19**





Operator's Guide  
**Biograph 64**

**SIEMENS**

medical

syngo MI.PET/CT 2006A, February 2006, Part # D0006862 Rev. A

SMS001336  
000115

## Patent Label

ONE OR MORE OF THESE U.S. AND FOREIGN PATENTS APPLY TO THIS DEVICE		
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4,749,883	6,328,027	6,832,400
4,750,972	6,328,667	6,413,311
4,843,248	6,342,688	CAN 1,248,378
4,956,080	6,362,479	EP 0373970
5,028,151	6,429,434	EP 88900407.7
5,224,037	5,985,155	JP 1-260313
5,296,708	6,898,234	JP 60024986
6,387,222	6,748,761	NOR 883873
6,396,187	6,490,476	
6,471,061	6,831,284	
6,750,891	6,449,331	
6,840,680	6,862,980	
6,298,399	6,864,543	

## DHHS Label

THIS PRODUCT COMPLIES  
WITH DHHS REGULATIONS  
21 CFR SUBCHAPTER J,  
APPLICABLE DATE OF  
MANUFACTURE

## Trip Hazard Label

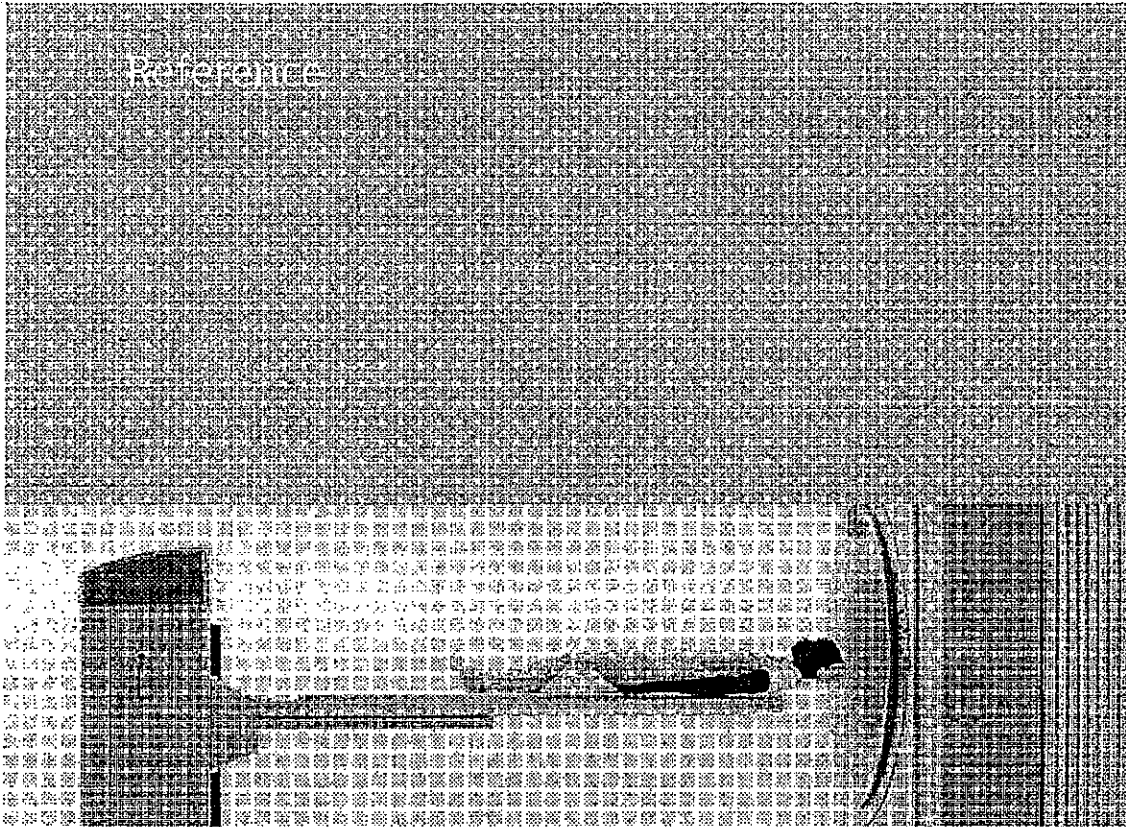


## Hand Crush Hazard Label





# **EXHIBIT 20**



Operator's Guide  
**Biograph**  
TruePoint PET-CT

**SIEMENS**  
medical

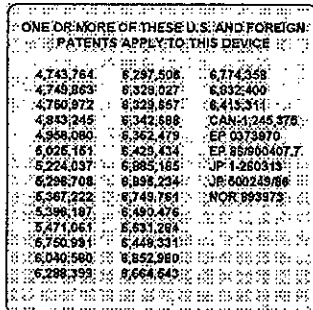
syngo MI.PET/CT 2007A, January 2007, Part #10244667 Rev. 01

## Patient Handling System

### DHHS Label



### Patent Label



### Trip Hazard Label



### Hand Crush Hazard Label



# **EXHIBIT 21**

# SIEMENS

## biograph

NM																	
<b>Update Instructions</b>	<b>NM526/04/P</b>																
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Materials free of charge? <span style="margin-left: 40px;"><input checked="" type="checkbox"/> Yes</span> <span style="margin-left: 40px;"><input type="checkbox"/> No</span>																	
Return of parts? <span style="margin-left: 40px;"><input type="checkbox"/> Yes</span> <span style="margin-left: 40px;"><input checked="" type="checkbox"/> No</span>																	
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<b>Systems/Products affected/System Identifying IVK</b>																	
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Name	Material No.	Serial No.															
Remark:																	
<b>Components affected/to be modified/IVK</b>																	
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Name	Material No.	Serial No.	Component status affected														
Name: Randy Johnson Dept: SMS-NMG																	
<div style="font-size: small;">             © Siemens AG 2001              The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.           </div>																	

document 8727229-EUA-000-01  
 replaces: n.a.

ECO 500882

Document Date: 17 SEP 2004  
 1 of 7

SMS003558  
 000121

## Update Instructions NM526/04/P

Description	Serial Number	IVK	LINA
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Biograph LSO Duo	3600214-01-0301041	7568061	214-011041

**Document Revision Level**

This document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

Please contact your local Siemens office to order current revision levels.

**Disclaimer**

The installation and service of equipment described herein is to be performed by qualified personnel who are employed by Siemens or one of its affiliates or who are otherwise authorized by Siemens or one of its affiliates to provide such service.

Assemblers and other persons who are not employed by or otherwise directly affiliated with or authorized by Siemens or one of its affiliates are directed to contact one of the

**Update Instructions NM526/04/P**

local offices of Siemens or one of its affiliates before attempting installation or service procedures.

**Systems/Products Affected**

n.a.

**Reason for the Update**

A new revision for patent label.

**Prerequisites**

n.a.

**Special Tools /Documents**

n.a.

**Ordering Information**

The following update kit has to be ordered via normal Siemens parts channels.

**Contents of the Update Kit**

POS.	Quan.	Siemens Mat. #	CPS Material No.	Name
1.	1	87 27 237	1200277-00	Patent Label

**Return of Parts**

n.a.

**Service Notes**

n.a.

**Work Steps**

Begins next page.

## Update Instructions NM526/04/P



# PRODUCT CORRECTION

No. PC00075

Title: ADD PATENT #6-362-479 TO PATENT LABEL #1200277-00  
 Approved: 06/25/2004 Prepared By: Matthew Stoakes  
 ECN/CAN C0000858 (or 02-331) Resp. Engineer: Chuck Brenner  
 System: PET/CT Value of Parts  
 Provided:

Subsystem: Gantry

Labor-Price Of  
Reimbursement:

Category: Product Correction

Designated 75  
PCN #

Reason for

Update:

Urgency: Within 3 months

Update Yes

Materials free of Yes  
Charge?Materials  
Required?

Customer No

Information?

Estimated Completion Time: 5 minutes

Number of CSEs: 1

## ▼ Purpose:

New Rev for Patent Label. Now at Rev. D

## ▼ Additional Information:

ADD PATENT # 6,362,479 TO PATENT LABEL #1200277-00

Rev. C was 02-111, what was 02-158?

site list is complete

Will the material be returned? No  
 if yes:

## ▼ Applicable Sites:

## ▼ Required Material:

Item CTI Part No. SMS Part No. Description Qty

1. 1200277-00 n/a Label for Gantry 1

## ▼ Instructions:

All PET/CT systems needs to be upgraded to Rev D patent label. Remove old label and/or place new one over top old label. Label is located near the circuit breaker on the rear side of the PET gantry. Rework to be completed at next site visit when replacement labels are available. The attached PDF shows what the label looks like and what number was added to the patent label.



## Update Instructions NM526/04/P

## INSTRUCTIONS FOR INSTALLING NEW PATENT LABEL

All PET/CT systems needs to be upgraded to Rev D patent label. Remove old label and/or place new one over top old label. Label is located near the circuit breaker on the rear side of the PET gantry. Rework to be completed at next site visit when replacement labels are available. The attached bitmap shows what the label looks like and what number was added to the patent label.



## Update Instructions NM526/04/P

### Final Check

Before the system is returned to the customer for use, ensure that it is in proper working order.

### Customer Information

n.a.

### Final Work Steps

1. Use SAP or the Intranet application UI-reply tool to report the Update performed.

### Changes to previous version

n.a.

### Attachments

n.a.

## Update Instructions NM526/04/P

### Completion Protocol

The update with the number **NM526/04/P** has been completed.

Material Number: .....

Serial Number: .....

Customer: ..... Site: .....

Customer No.: .....

Name ( CSE ): ..... Telephone: .....

Country: ..... Location: .....

Date: ..... Signature: .....

Remark: .....  
.....  
.....

#### NOTE

After completing the update, make a copy of this page, fill it out and file it at the back of the corresponding System Owners Manual Binder

# **EXHIBIT 22**



**INTERROGATORY NO. 2:**

Describe in detail the factual and legal basis for Saint-Gobain's contention that it "ha[s] not infringed, and do[es] not infringe, either through inducement of infringement, or by contributory infringement, of [sic] any claim of the '080 Patent, either literally or under the doctrine of equivalents."

**RESPONSE:**

**INTERROGATORY NO. 3:**

Describe in detail the development and design for each Accused Product, identify all individuals and entities involved therein and describe their respective roles.

**RESPONSE:**

**INTERROGATORY NO. 4:**

To the extent Saint-Gobain contends that Siemens Medical is barred from asserting that any Accused Product meets any element in any claim of the '080 Patent under the doctrine of equivalents, describe in detail the factual and legal basis for Saint-Gobain's contention.

**RESPONSE:**

**INTERROGATORY NO. 5:**

Describe in detail the factual and legal basis for Saint-Gobain's contention that any claim of the '080 Patent is invalid, and identify each item of Prior Art that Saint-Gobain contends, either alone or in conjunction with other Prior Art, invalidates any claim of the '080 Patent and describe in detail how the item invalidates the claim.

when Saint-Gobain first knew that the Accused Product was being applied for that use and identify by whom the Accused Product is being or has been applied for that use.

**RESPONSE:**

**INTERROGATORY NO. 10:**

Describe in detail the factual and legal basis for Saint-Gobain's contention in its Answer that Siemens Medical is "estopped from construing any claim of the '080 Patent to be infringed or to have been infringed, either literally or by application of the doctrine of equivalents, by any method or product manufactured, used, imported, sold or offered for sale by [Saint-Gobain] in view of the prior art and/or because of admissions and statements made to the United States Patent and Trademark Office during prosecution of the application leading to the issuance of the '080 Patent, because of disclosure or language in the specification of the '080 Patent, and/or because of limitations in the claims of the '080 Patent."

**RESPONSE:**

**INTERROGATORY NO. 11:**

Identify the field of art to which Saint-Gobain contends the subject matter of the '080 pertains and describe the level of ordinary skill in that field of art as of October 6, 1988.

**RESPONSE:**

**INTERROGATORY NO. 12:**

Describe in detail the factual and legal basis for Saint-Gobain's contention that Siemens Medical's "claims are barred, in whole or in part, by the doctrine of laches, waiver and/or estoppel."

# **EXHIBIT 23**



**KIRKLAND & ELLIS LLP**  
AND AFFILIATED PARTNERSHIPS

655 Fifteenth Street, N.W.  
Washington, D.C. 20005

Gregg F. LoCascio  
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glocascio@kirkland.com

(202) 879-5000

www.kirkland.com

Facsimile:  
(202) 879-5200

September 7, 2007

**VIA EMAIL AND FEDERAL EXPRESS**

Kelly E. Farnan  
Richards, Layton & Finger, P.A.  
One Rodney Square, P.O. Box 551  
Wilmington, DE 19899

Frederick L. Whitmer, Esq.  
Thelen Reid Brown Raysman & Steiner LLP  
875 Third Avenue  
New York, New York 10022

Re: Siemens Medical Solutions USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.  
(D. Del. Civil Action No. 07-190 SLR)

Dear Fred & Kelly:

I write regarding several apparent deficiencies in Saint-Gobain's responses to Siemens Medical's discovery requests. Given that we previously agreed to Saint-Gobain's request for an extension to respond to discovery and the limited period for discovery related to Siemens Medical's motion for preliminary injunction, please provide the information identified below by no later than September 13, 2007.

As an initial matter, I note that Siemens Medical agreed to extend Saint-Gobain's request for an additional two-weeks to respond to Siemens Medical's discovery requests based on your representations that (1) Saint-Gobain would be producing materials and providing discovery responses on a rolling basis over those two weeks, and (2) that Saint-Gobain would be making a good faith effort to produce the requested documents and information. As a result, we agreed to your requested extension and were then surprised when we did not receive a single Saint-Gobain production document nor a single interrogatory or RFA answer during the two weeks and instead received nothing until the conclusion of the two-week extension on August 31st. Even then, we were further surprised to see that, after the extended deadline had passed, Saint-Gobain still produced only a total of 163 pages in response to Siemens Medical's 24 document requests and has refused to identify through an outstanding interrogatory whose files were searched to find documents responsive to the document requests.

Chicago

Hong Kong

London

Los Angeles

Munich

New York

San Francisco

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## KIRKLAND &amp; ELLIS LLP

September 7, 2007

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As for the “substance” of Saint-Gobain’s interrogatory responses, as set forth below Saint-Gobain’s responses wholly fail to address several critical categories of information and must be remedied promptly given the situation and schedule.

**Interrogatory No. 1:** It is not “premature” for Saint-Gobain to have to identify patent claim terms that it contends must be construed and to provide constructions for those terms. Saint-Gobain’s flat refusal to do so is improper and stymies the discovery and preliminary injunction process and schedule we agreed to and the Court entered. To the extent Saint-Gobain will contend the ‘080 patent is invalid or that it did not infringe the ‘080 patent, both inquiries involve as their first step the proper construction of any disputed claim terms. While Siemens Medical believes that all of the claim terms can be construed according to their ordinary meanings and, therefore, do not need Court construction, we produced the documents needed for claim construction (e.g., the patent prosecution histories) so that Saint-Gobain could quickly identify any claim terms whose meaning it disputed. Please either respond to this interrogatory immediately or confirm that Saint-Gobain agrees there are no claim terms that require construction by the Court.

**Interrogatory No. 2:** The interrogatory requires Saint-Gobain to “describe in detail the factual and legal basis for Saint-Gobain’s contention that it ‘ha[s] not infringed, and do[es] not infringe, ... any claim of the ‘080 Patent, either literally or under the doctrine of equivalents.” Saint-Gobain’s bare-bones response – that it “believes that there are substantial differences between the LYSO crystals that it manufactures, sells or offers for sale and the LSO crystals that are disclosed in connection with the claims contained in the ‘080 patent” – is about as far from a “detailed” response as possible and is insufficient. While Saint-Gobain’s response makes clear that Saint-Gobain contends that the “insubstantial differences” test – and only that test – should be applied, Saint-Gobain has not described what properties show the “substantial differences” Saint-Gobain claims exist between LYSO and LSO crystals. Indeed, Saint-Gobain’s response is nothing more than a regurgitation of the “insubstantial differences” test itself. Please confirm that Saint-Gobain will not argue that its LYSO crystals do not satisfy the “scintillator” element of the claims of the ‘080 patent under the doctrine of equivalents when any other test for equivalence is applied. Please also specifically identify the differences between Saint-Gobain’s LYSO crystals and the claimed LSO crystals that Saint-Gobain contends are substantial. Given that this issue is the crux of the pending preliminary injunction motion, the promptness of Saint-Gobain’s response is critical and required to avoid an ambush by Saint-Gobain in discovery.

## KIRKLAND &amp; ELLIS LLP

September 7, 2007

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**Interrogatory No. 3:** The interrogatory requires Saint-Gobain to “describe in detail the development and design for each Accused Product, identify all individuals and entities involved therein and describe their respective roles.” Rather than responding to the interrogatory, Saint-Gobain incorrectly invokes “Rule 33(c).” We presume you actually intended to refer to Rule 33(d), but even that provision does not apply here. Rule 33(d) may only be invoked where “the burden of deriving or ascertaining the answer [to the interrogatory] is substantially the same for [Siemens Medical] as for [Saint-Gobain].” That is clearly not the case here, since Saint-Gobain alone has access to all of the individuals involved in the development and design processes for its products. Moreover, even if Rule 33(d) applied, Saint-Gobain has not provided the information necessary to invoke that provision, namely, a specification of the records by specific Bates-number or other means from which the answer to the interrogatory may be derived “in sufficient detail to permit [Siemens Medical] to locate and to identify, as readily as can [Saint-Gobain], the records from which the answer may be ascertained.” See *Willemijn Houdstermaatschaap BV v. Apollo Computer Inc.*, 707 F. Supp. 1429, 1440 (D. Del. 1989) (rejecting a similar interrogatory response that merely stated that responsive documents had been produced). Moreover, even going beyond our obligation to try to move this along given the paucity of Saint-Gobain’s 163 page document production, the answer to Siemens Medical’s interrogatory is nowhere to be found in those documents. Please provide a complete response to this interrogatory immediately.

**Interrogatory No. 4:** The interrogatory requires Saint-Gobain to describe in detail the factual and legal basis for its contention, if any, that Siemens Medical is barred from asserting the doctrine of equivalents. Saint-Gobain’s response that this interrogatory is premature at this stage is either premised on the stipulation that Saint-Gobain will not argue that Siemens Medical is barred from asserting the doctrine of equivalents in its opposition to Siemens Medical’s motion for preliminary injunction or is otherwise improper. Accordingly, please confirm that Saint-Gobain does not intend to argue that Siemens Medical is barred from asserting the doctrine of equivalents or provide a complete response to the interrogatory immediately.

**Interrogatory No. 5:** The interrogatory requires Saint-Gobain to not only identify the prior art it claims renders the ‘080 patent invalid, but also describe how that prior art invalidates the patents. While Saint-Gobain has identified some prior art, its response does nothing to describe how that art shows on an element-by-element basis that the ‘080 patent claims are either anticipated or obvious. Please supplement Saint-Gobain’s response to provide this information.

KIRKLAND & ELLIS LLP

September 7, 2007

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**Interrogatory No. 6:** The interrogatory requires Saint-Gobain to describe the factual and legal basis for its contention that the '080 patent is unenforceable, if Saint-Gobain so contends. Saint-Gobain's objection that the interrogatory is premature at this stage is again either premised on the stipulation that Saint-Gobain will not argue that the patent is unenforceable in opposing Siemens Medical's motion for preliminary injunction or is improper. Please confirm that Saint-Gobain does not intend to make this argument in opposition to the pending motion or provide a satisfactory response immediately.

**Interrogatory No. 7 and Document Request No. 11:** Saint-Gobain's response to this interrogatory "refers to its response to [Siemens Medical's Document] Request No. 11 ... where Saint-Gobain identifies all customers and potential customers to whom Saint-Gobain has sold or offered to sell activated, lutetium-based orthosilicate single crystal products, together with information concerning the volume and dollar value of any such sales made, to date, which may include responsive information." However, the document request response contains no such information - it merely states that a such a summary document will be produced, which after another week still does not appear to have been provided by Saint-Gobain. In addition, Saint-Gobain must do more than merely "refer" to a document and should state the information it is aware of in the interrogatory response itself, which it must verify under oath. Please produce the document and respond to this interrogatory without further delay.

**Interrogatory No. 8:** Saint-Gobain's response to this interrogatory does not identify where the Accused Products are used or imported and it does not identify any other entities involved in making, selling, using or importing the Accused Products. Please supplement Saint-Gobain's response to provide this information.

**Interrogatory No. 9 and Document Request Nos. 12 and 13:** The interrogatory requires Saint-Gobain to identify "all substantial uses known to Saint-Gobain" for each Accused Product, including uses that Saint-Gobain considers to be non-infringing. Saint-Gobain's refusal to respond to this interrogatory is improper. Indeed, I was of the understanding from conversations you have had with me and Gregg LoCascio that Saint-Gobain was not aware of any such uses and would not be contesting this issue, certainly not at this stage. Again, unless Saint-Gobain is willing to stipulate that the Accused Products have no non-infringing uses, please respond to the interrogatory in full.

Moreover, Siemens Medical's Document Request Nos. 12 and 13 require Saint-Gobain to produce all documents concerning any substantial uses of its Accused Products. Saint-Gobain has improperly refused to produce documents responsive to this document request

## KIRKLAND &amp; ELLIS LLP

September 7, 2007

Page 5

“unless and until Saint-Gobain first determines whether, for purposes of Siemens Medical’s pending preliminary injunction motion, Saint-Gobain intends to address contentions that the Accused Product is or is not a staple item of commerce,” while at the same time refusing to admit that the Accused Products have no substantial non-infringing use in response to Siemens Medical’s Request for Admission Nos. 60-62. Saint-Gobain cannot have it both ways. Please immediately produce all documents related to any substantial use of the Accused Products or admit that Saint-Gobain’s LYSO crystals have no substantial non-infringing use and are not staple articles of commerce.

**Interrogatory No. 10:** The interrogatory requires Saint-Gobain to disclose the basis for its prosecution history estoppel defense. The interrogatory is not “premature” as Saint-Gobain contends, because Saint-Gobain already asserted the defense in its Answer and either had a basis for that defense or should never have included it in the first place. Moreover, all of the evidence that would seem to be necessary for Saint-Gobain’s defense, namely, the ‘080 patent and its prosecution history file, were disclosed to Saint-Gobain well over a month ago. Accordingly, there is no reason for Saint-Gobain to withhold this information – please respond to the interrogatory at once.

**Interrogatory No. 11:** The interrogatory requires Saint-Gobain to describe the field of art relevant to the claims of the ‘080 patent and the level of ordinary skill in that field of art. This information is plainly relevant to the invalidity defense that Saint-Gobain has indicated it intends to assert in opposing Siemens Medical’s motion for preliminary injunction and which was also raised in Saint-Gobain’s Answer. Accordingly, it is not premature, and Saint-Gobain must respond to the interrogatory immediately.

**Interrogatory No. 12:** The interrogatory requires Saint-Gobain to disclose the bases for its laches, waiver, and estoppel defenses. These defenses require that Siemens Medical have notice of Saint-Gobain’s infringing activities and, from the point that notice is received, unreasonably delay enforcing the patent to prevent Saint-Gobain’s continuing infringement. But, Saint-Gobain’s response to the interrogatory does not even allege when Siemens Medical supposedly was notified of Saint-Gobain’s infringing acts. Based on the lack of any good faith basis for these defenses, please confirm that Saint-Gobain will withdraw these defenses at once or provide a more thorough response immediately so this can be discussed further.

**Interrogatory No. 14:** The interrogatory requires Saint-Gobain to identify the individuals and groups from which it sought documents in response to Siemens Medical’s document requests. Because of the straightforward and entirely proper nature of such a request,

# **EXHIBIT 24**

**REDACTED**

# **EXHIBIT 25**





875 Third Avenue New York, NY 10022  
Phone: 212 603 2000 Fax: 212 603 2001  
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John C. Ohman  
Partner  
212.603.6787 Direct Dial  
johman@thelen.com

April 4, 2008

**By Federal Express  
And Electronic Mail**

Charanjit Brahma, Esq.  
Kirkland & Ellis LLP  
655 Fifteenth Street, N.W.  
Washington, DC 20005

Re: Siemens Medical Solutions USA, Inc. v. Saint-Gobain  
Ceramics & Plastics, Inc. (D. Del. C.A. No. 07-190-SLR)

Dear Charan:

This letter responds to your March 26, 2008 correspondence respecting certain of Saint-Gobain's affirmative defenses in this action.

Saint-Gobain's forthcoming answer to Siemens' Amended Complaint will confirm that Saint-Gobain does not intend to contend at trial that the '080 patent is invalid or unenforceable. We do disagree, however, with the "suggestions" you have read into Saint-Gobain's discovery responses regarding the following affirmative defenses:

(1) Saint-Gobain has asserted, and intends to prove at trial, that Siemens is barred from asserting infringement under the doctrine of equivalents for reasons that we have previously identified. The principal bases of this defense are discussed in Saint-Gobain's responses to Siemens' Interrogatories Nos. 4 and 10, as supplemented, and are more fully set forth in Foley & Lardner's March 2006 non-infringement opinion respecting the '080 Patent;

(2) Saint-Gobain also intends to press its affirmative defenses based on laches, waiver and equitable estoppel on the bases discussed in its response to Siemens' Interrogatory No. 12.

Finally, as we have also previously indicated, Saint-Gobain does not intend to pursue a defense based on substantial non-infringing uses of the PreLude 420 LYSO Crystal. In light of Saint-Gobain's prior discovery responses on this point, we see no need to enter into a formal stipulation to that effect.



Charanjit Brahma, Esq.  
April 4, 2008  
Page 2

Please let us know if you have any questions regarding the foregoing.

Very truly yours,

A handwritten signature in black ink, appearing to be "John C. Ohman".

John C. Ohman

FLW:esg

cc: Gregg LoCascio, Esq.  
Kelly Farnan, Esq.  
Thomas Field, Esq.  
Frederick L. Whitmer, Esq.

# **EXHIBIT 26**

REDACTED

# **EXHIBIT 27**

SERIAL NUMBER 07/389502		PATENT DATE SEP 18 1990		PATENT NUMBER 4958080	
SERIAL NUMBER 07/389502	FILING DATE 02/04/89	CLASS 250	SUBCLASS 301.4	GROUP ART. UNIT 250 F3	EXAMINER C. J.
APPLICANT CHARLES I. MELCHER, WEST REDDING, CT.					
**CONTINUING DATA***** VERIFIED THIS APPLN IS A CONT. OF 07/254,353 10/06/88. <i>renewed.</i>					
**FOREIGN/PCT APPLICATIONS***** VERIFIED					
Foreign priority claimed 35 USC 119 conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		AS FILED <input checked="" type="checkbox"/>	STATE OR COUNTRY CT	SHEETS DRWGS. 2	TOTAL CLAIMS 12
Verified and Acknowledged Examiner's Initials		FILING FEE RECEIVED \$ 526.00		ATTORNEY'S DOCKET NO. 275151539151	
ADDRESS BRUMBAUGH, GRAVES, DONOHUE & RAYMOND 30 ROCKEFELLER PLAZA NEW YORK, NY 10112					
TITLE LUTETIUM OPHOSILICATE SINGLE CRYSTAL SCINTILLATOR DETECTOR					
CERTIFICATE JUN 9 1992 OF CORRECTION <i>1 sheet of drawing transferred from S.N. 254,353 2/26/90</i>					
PARTS OF APPLICATION FILED SEPARATELY					
NOTICE OF ALLOWANCE MAILED MAR -1 1990 5-8-90		PREPARED FOR ISSUE 8/1/90 Assistant Examiner J. Fitchett Jack Cooper PRIMARY PATENT EXAMINER ART UNIT 113 Primary Examiner		CLAIMS ALLOWED Total Claims 2 Print Claim 1	
ISSUE FEE Amount Due 5620.00 Date Paid 7/16/90		DRAWING Sheets Drwg. 2 Figs. Drwg. 2 Print Fig. NONE			
Label Area		ISSUE CLASSIFICATION Class 250 Subclass 483.1		ISSUE BATCH NUMBER F33	
WARNING: The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code Title 35, Sections 122, 181, and 388. Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.					

27515-539/11889

PATENT

RECEIVED  
90 FEB 20 4 11 PM '89  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
GROUP 110

Applicant : Charles L. Melcher  
Serial No. : 07/254,353 Examiner : J. Cooper  
Filed : October 6, 1988 Group Art Unit: 113  
For : LUTETIUM ORTHOSILICATE SINGLE  
CRYSTAL SCINTILLATOR

I hereby certify that this paper is being deposited with the U. S. Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, DC 20231, on February 24, 1989.

Richard G. Berkley	25,465
Attorney Name	Registration No.
<i>Richard G. Berkley</i>	February 24, 1989
Signature	Date of Signature

AMENDMENT

Hon. Comm. of Patents and Trademarks  
Washington, D. C. 20231

Sir:

In response to the Office Action dated November 28, 1988 in the above-identified application, please amend the application as follows:

In the Claims:

Please amend claims 1-4 as follows:

--1. (Amended) A scintillator for use in a gamma ray or x-ray [like radiation] detector, comprising a transparent single crystal of cerium-activated lutetium oxyorthosilicate having the general formulation  $\text{Ce}_{2x}\text{Lu}_{2(1-x)}\text{SiO}_5$ , where x is [the concentration in the melt from which the crystal is pulled and is] within the range of from approximately [0.001]  $2 \times 10^{-4}$  to approximately [0.1]  $3 \times 10^{-2}$  ---;

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--2. (Amended) The scintillator of claim 1 wherein x is within the range of approximately  $[0.005] \underline{1 \times 10^{-3}}$  to approximately  $[0.015] \underline{4.5 \times 10^{-3}}$ .---

--3. (Amended) A gamma ray or x-ray [like radiation] detector, comprising:

a scintillator composed of a transparent single crystal of cerium-activated lutetium oxyorthosilicate having the general formulation  $\text{Ce}_{2x}\text{Lu}_{2(1-x)}\text{SiO}_5$ , where x is [the concentration in the melt from which the crystal is pulled and is] within the range of from approximately  $[0.001] \underline{2 \times 10^{-4}}$  to approximately  $[0.1] \underline{3 \times 10^{-2}}$ , and

a photodetector optically coupled to the scintillator for producing an electrical signal in response to the emission of a light pulse by the scintillator.---

--4. (Amended) The detector of claim 3 wherein x is within the range of approximately  $[0.005] \underline{1 \times 10^{-3}}$  to approximately  $[0.015] \underline{4.5 \times 10^{-3}}$ .---

#### R E M A R K S

Claims 1-4 have been rejected for indefiniteness and for obviousness over the prior art. Reconsideration and withdrawal of these rejections are respectfully requested.

The indefiniteness rejection is based on alleged indefiniteness in (1) the use of the term "or like" to refer to radiation other than gamma ray radiation to which the scintillator responds, (2) the definition of the cerium content of the crystal in terms of the cerium concentration in the melt from which the crystal is pulled, and (3) the use of the lan-



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guage "in the melt from which the crystal is pulled". Claims 1-4 have been amended to eliminate all three grounds of rejection. The first ground has been eliminated by deleting the term "like radiation" from independent claims 1 and 3 and substituting --x-ray-- in place thereof. Clear support for the recitation of x-ray detection is found at page 5, line 29 - page 6, line 2. No issue of new matter arises. Also, no indefiniteness results from defining the scintillator as responsive to "gamma ray or x-ray" radiation, inasmuch as gamma rays and x-rays differ only as to origin and are essentially indistinguishable insofar as the scintillator is concerned.

The second and third grounds for the indefiniteness rejection has been eliminated by amending claims 1-4 to delete the reference to the melt and the melt concentrations and to define the cerium concentration by reference to the crystal alone. At page 11, lines 23-24, of the specification, it is disclosed that the cerium concentration in the crystal is on the order of 20%-30% of that in the melt. That is to say, approximately 20%, on the low side, and 30%, on the high side, of the cerium in the melt will be substituted for the lutetium in the LSO crystal. Applying 20% to the lower limit of x in the formula of claims 1 and 3 and 30% to the upper limit of x in that formula yields a range of x of from approximately  $2 \times 10^{-4}$  to approximately  $3 \times 10^{-2}$  as the range of cerium concentration in the crystal. Claims 1 and 3 have been amended to recite this range. Claims 2 and 4 have similarly been amended to recite the preferred range of x in the crystal. In light of the clear support in the specification from these amendments, no new matter is introduced, and grounds (2) and (3) for the indefiniteness rejection are removed.

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The obviousness rejection is based on the disclosure of the Matsushita patent document in combination with the disclosures of the Takagi et al., patent and the Watanabe et al. patent. The Examiner acknowledges that while Matsushita discloses a cerium-activated lutetium oxyorthosilicate (LSO) luminescent material, he fails to disclose such material in single crystal form or its use as a gamma ray/x-ray detector. The Examiner concludes, however, that it would have been suggested (and thus obvious) to one of ordinary skill in the art from Takagi et al., which discloses a cerium-activated gadolinium oxyorthosilicate (GSO) single crystal gamma ray detector, and Watanabe, which allegedly discloses the "common use of gadolinium and lutetium" in cerium-activated rare earth oxyorthosilicate luminescent material, to use the luminescent material of Matsushita in single crystal form in a radiation detector. We respectfully submit that the references relied on, whether taken singly or in combination, fail to disclose or suggest either the claimed scintillator or its use as a gamma ray/x-ray detector, and that the rejection should therefore be withdrawn.

In addition to its failure to disclose either the single crystal form of LSO or the use of LSO as a gamma ray/x-ray detector, Matsushita is deficient in at least two other important respects as well: it includes no disclosure at all, one, that cerium-activated LSO in any form is responsive to gamma ray/x-ray excitation, and, two, that cerium-activated LSO could even be grown in single crystal form or that, if it were, that it would have the transparent properties or scintillation properties required for a gamma ray/x-ray detector. In fact, all that Matsushita does disclose is a particular

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process for producing pure white electron beam (EB) excitable and ultraviolet (UV) excitable cerium-activated powder phosphors for use in flying-spot tubes and plasma displays.

(A translation of Matsushita is attached as Exhibit A.) There is no mention whatsoever of the single crystal form, transparency, or response (useful or otherwise) to gamma ray/x-ray excitation. Certainly, therefore, there is no suggestion in Matsushita that the claimed invention should or could be made.

Although Takagi et al. do disclose the use of a cerium-activated GSO single crystal scintillator as a gamma ray detector, they do not disclose that any other rare earth oxyorthosilicate material would be suitable for use as a cerium-activated single crystal gamma ray or x-ray detector. Indeed, they criticize the use of the rare earth oxyorthosilicate  $Y_2SiO_5$  (yttrium oxyorthosilicate) for that purpose. (See Col. 2, line 10 et seq. of the Takagi et al. patent)

Beyond the criticism of yttrium, there are other good reasons why those skilled in the art would not have been led by Takagi et al. to conclude that the white phosphor form of LSO disclosed by Matsushita should, or even could, be useful in the single-crystal form as a gamma ray/x-ray detector. First, although the rare earth silicates are similar chemically, their optical and luminescent properties are known to differ widely and unpredictably. For example, ytterbium and lutetium are adjacent to one another in the periodic chart and are quite similar chemically. Yet their optical properties are dramatically different even at the phosphor stage, let alone the crystal stage. Second, the optical and luminescent properties of the single-crystal form are not predictable from the phosphor form. Third, the conversion efficiency of inci-

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dent photons to light output in a luminescent material depends upon the energy of the incident radiation and the loss mechanism in the material. Hence that a material luminesces in response to EB or UV excitation does not indicate how the material would respond to gamma ray or x-ray excitation. Fourth, the ionic size of cerium is about twice that of lutetium, while cerium and gadolinium are of approximately the same ionic size. Thus the fact that cerium ions substitute for gadolinium ions in the growth of a GSO single crystal does not predict that cerium ions would be taken up in sufficient concentration or with the proper distribution in an LSO single crystal to provide a useful gamma ray/x-ray scintillator.

Furthermore, the prosecution record of the Takagi et al. patent provides convincing objective evidence that the disclosure of a cerium-activated GSO single crystal scintillator does not suggest the utility of a cerium-activated LSO single crystal scintillator. In the parent application (Serial No. 462,227) and again in the continuation application (Serial No. 787,076), Takagi submitted a Declaration describing experiments that he had conducted with two known scintillators under gamma ray excitation,  $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Ce}$  and  $\text{YAlO}_3:\text{Ce}$ , and two like compounds except that the yttrium (Y) was replaced by gadolinium (Gd). (A copy of the Declaration from Application Ser. No. 787,076 is attached as Exhibit B.) In the latter two cases, the gadolinium compounds did not exhibit scintillation under gamma ray (Y) excitation. Based on these results, Takagi concluded that "even when a compound containing Y does serve as a scintillator for Y ray irradiation, it cannot be estimated whether or not another compound in which Y is substituted with Gd can also serve as a scintillator for

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x-ray irradiation". (See Exhibit A, p. 10, emphasis added) Thus, Takagi himself is of record as stating that the scintillation properties of one rare earth compound do not afford a basis for predicting the scintillation properties of another rare earth compound.

It cannot be said, therefore, that one skilled in the art would be led by Takagi et al. to conclude that the EB and UV-excited LSO white phosphor of Matsushita should (or even could) be grown into a transparent, single-crystal form or that, if it were, that it would possess the luminescent properties required for a gamma ray/x-ray detector. Rather, the Takagi et al. disclosure and prosecution record, taken as a whole, actually lead away from that suggestion.

As previously noted, the Watanabe et al. patent has been cited by the Examiner as teaching the common use of gadolinium and lutetium in a cerium activated rare earth oxyorthosilicate luminescent material. What Watanabe et al. in fact disclose is a rare earth (Y, Ln, Gd, or Lu) oxyorthosilicate which is co-activated by cerium and terbium to produce visible green rays when excited by ultraviolet (UV) radiation whose wavelengths lie within a broad range. The high efficiency of the phosphor is attributed to the transmission to the activator Tb<sup>3+</sup> of the energy of UV rays absorbed in the activator Ce<sup>3+</sup>. (See Col. 2, lines 55-66) The purpose is to provide a green-light emitting phosphor for use in fluorescent lamps.

At the most, therefore, Watanabe et al. disclose the common use of GSO and LSO as Ce and Tb - coactivated phosphors for green-light emission under broad band UV excitation. As this involves an altogether different physical structure and

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an altogether different excitation and scintillation mechanism than those of the claimed invention, it neither discloses nor suggests anything concerning the interchangeability of GSO and LSO as Ce-activated single crystal scintillators for gamma/x-ray excitation. Hence, Watanabe et al. would not lead one skilled in the art to modify the Matsushita phosphor in the manner proposed in the rejection.

The art completely lacks any disclosure of a transparent, single crystal cerium-activated lutetium oxyorthosilicate scintillator. Furthermore, for the reasons given above, the art of record lacks any suggestion of either the claimed scintillator or its use as a gamma ray/x-ray detector. As recently stated by the Court of Appeals for the Federal Circuit, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." In re Fine, 5 U.S.P.Q. 2d 1596, 1599. And "the teachings of references can be combined only if there is some suggestion or incentive to do so (Id. at 1599, emphasis in original). Here, as in In re Fine, the prior art contains no such teaching, suggestion or incentive. We submit, therefore, that claims 1-4, as amended, define patentably over the prior art and are allowable.

Pursuant to 37 C.F.R. §§1.97 and 1.98, applicant encloses herewith a copy of each of the references listed on the attached form PTO-1449 and requests that it be considered and made of record in the application. The references were not earlier cited because this application was examined and acted upon by the Examiner within two months of its filing date, which was well before either of the two recommended

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deadlines for filing an Information Disclosure Statement provided in 37 C.F.R. §1.97.

Buisson et al. disclose the crystallographic parameters of lutetium oxyorthosilicate powder along with those for other rare earth oxyorthosilicates.

Gomes de Mesquita et al. disclose cerium-activated lutetium oxyorthosilicate powders for use as cathode-ray phosphors.

Anan'eva et al. describe the growth by the Czochralski method of undoped single crystals of oxyorthosilicates of lanthanides from gadolinium to lutetium, and of yttrium oxyorthosilicate.

Holsa et al. describe the optical properties of  $\text{Eu}^{3+}$ -activated rare earth oxyorthosilicate powders, wherein the rare earth elements were gadolinium, yttrium and lutetium.

Takagi et al. relates to the same general subject matter of the Takagi et al. patent already of record, i.e., a cerium-activated gadolinium oxyorthosilicate single crystal for use in position computed tomography.

Brandle et al. describe the growth of crystals of the type  $\text{Ln}_2\text{SiO}_5$  (Ln is a lanthanide) by the Czochralski method. Of the four original lanthanides selected for evaluation ( $\text{La}_2\text{SiO}_5$ ,  $\text{Ce}_2\text{SiO}_5$ ,  $\text{Gd}_2\text{SiO}_5$ , and  $\text{Y}_2\text{SiO}_5$ ) only two ( $\text{Gd}_2\text{SiO}_5$  and  $\text{Y}_2\text{SiO}_5$ ) were found suitable for Czochralski growth experiments.

Rabinovich et al. disclose the preparation of sols and gels of  $\text{Tb}^{3+}$ -doped yttrium orthosilicate for use as cathodoluminescent films.

Blasse et al. describe the luminescence properties of a large number of phosphors or phosphor families. The

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authors conclude that while much is known about phosphors, much is not well known and is subject to empirical prediction, if at all.

Ishii et al. (English language) and the last listed Japanese-language paper (of which a translation is not available) both appear to relate to the cerium-activated GSO crystal scintillator of the Takagi patent of record. They are being submitted for completeness.

None of these additional references, whether taken alone or in combination, disclose or suggest the cerium-doped LSO single crystal scintillator of the present invention nor its use as a gamma ray/x-ray detector. Accordingly, the claims are patentably distinct from these references as well.

The application is believed to be in readiness for allowance in all respects. A favorable action is respectfully requested.

Respectfully submitted,

  
Richard G. Berkley  
Reg. No. 25,465  
Attorney for Applicant  
(212) 408-2554

Encl.



# **EXHIBIT 28**

REDACTED

# **EXHIBIT 29**

TRIAL NUMBER 254353		PATENT DATE		PATENT NUMBER	
SERIAL NUMBER 07/254-353	FILING DATE 10/06/88	CLASS 250	SUBCLASS	GROUP ART UNIT 256	EXAMINER
CHARLES L. MELCHER, WEST BEDDING, CT.					
**CONTINUING DATA***** VERIFIED					
**FOREIGN/PCT APPLICATIONS***** VERIFIED					
FOREIGN FILING LICENSE GRANTED 10/27/88					
Foreign priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no 35 USC 119 conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no		AS FILED	STATE OR COUNTRY CT	SHEETS DRWGS. 1	TOTAL CLAIMS 4
Verified and Acknowledged <input checked="" type="checkbox"/>		INDEX CLAIMS 2	FILING FEE RECEIVED 340.00	ATTORNEY'S DOCKET NO. 27515-539/11	
ADDRESS BRUMBAUGH, GRAVES, DONOHUE & RAYMOND 30 ROCKEFELLER PLAZA NEW YORK, NY 10117					
TITLE LUTETIUM ORTHOSILICATE SINGLE CRYSTAL SCINTILLATOR, <i>Detection</i>					
U.S. DEPT. of COMMERCE, Pat. & TM Office — PTO-436L (rev. 10-79)					
12/11/01, <i>transferred to S.A. 184,302</i> 2/24/90					
PARTS OF APPLICATION FILED SEPARATELY					
NOTICE OF ALLOWANCE MAILED		PREPARED FOR ISSUE 5/9/89		CLAIMS ALLOWED	
54-791		Assistant Examiner JACK COOPER PRIMARY PATENT EXAMINER ART UNIT 113		Total Claims 2	
ISSUE FEE Amount Due 620.00		Date Paid		DRAWING Sheets Drwg. 1	
Label Area		ISSUE CLASSIFICATION Class 250		Subclass 483.1	
Label Area		ISSUE BATCH NUMBER 362		Print Fig. None	
WARNING: The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code Title 35, Sections 122, 181 and 368. Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.					

PTO-436  
(10/88)SMS002949  
000175

UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark OfficeAddress: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
17515-558	10/15/98	MELCHER	17515-558/11

SPURGEON GRAY, DONALD & RAYMOND  
50 MCKEEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER	
COOPER, J.	
ART UNIT	PAPER NUMBER
113	2

DATE MAILED:

11/28/98

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

- ☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

## Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892. 2. ☐ Notice re Patent Drawing, PTO-948.  
3. ☐ Notice of Art Cited by Applicant, PTO-1449 4. ☐ Notice of Informal Patent Application, Form PTO-152  
5. ☐ Information on How to Effect Drawing Changes, PTO-1474 6. ☐ \_\_\_\_\_

## Part II SUMMARY OF ACTION

1. ☒ Claims 1 to 4 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1 to 4 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved, ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other \_\_\_\_\_

PTOL-326 (Rev. 7-82)

EXAMINER'S ACTION

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Serial No. 254,353

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Art Unit 113

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1-4 are rejected under 35 U.S.C. 103 as being unpatentable over Matsushita in view of Takagi et al and Watanabe. Matsushita discloses a cerium activated lutetium oxyorthosilicate luminescent material of the instant formulation that differs from that claimed in that it is not in single crystal form and there is no disclosure of its use in a radiation detector. Takagi et al, however, teach the use of gadolinium oxyorthosilicate luminescent material in single crystal form in a radiation detector and Watanabe et al teach the common use of gadolinium and lutetium in cerium activated rare earth oxyorthosilicate luminescent material. Accordingly, it would have been suggested to one of ordinary skill in the art to use the luminescent material of Matsushita in single crystal form (in a manner similar to Takagi et al) in a radiation

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Art Unit 113

detector.

Claims 1-4 are rejected under 35 U.S.C. 112,  
paragraph 2 in that:

- 1) "or like" is indefinite
- 2) defining the quantity of Ce in the claimed  
crystal in terms of the amount of Ce that is in the melt  
from which is is pulled in improper since it is not  
evident what said quantity is,
- 3) "in the melt from which the crystal is pulled"  
absent other process conditions is not adequately  
definitive thereof.

Cooper:vaw  
703-557-2517  
11-21-88

  
JACK COOPER  
PRIMARY PATENT EXAMINER  
ART UNIT 113

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